

IN THE CLAIMS:

The following is a complete listing of claims in this application.

Claims 1-14 (canceled).

15. (currently amended) Machine with an electromechanical converter, comprising:

a closed tubular cylinder having opposed, hermetically sealed end chambers;

a linear movable piston supporting a row of centrally placed tubular magnetic elements in the form of permanent magnets or coils, and arranged within the closed tubular cylinder to operate as a working element in a motor or a generator and which is provided with magnetic elements which establish an outwardly directed electrical field of force,

the end chambers being hermetically sealed sufficiently that at each end of the piston there is formed a gas spring of a pressure of at least 10 bar providing a resonance-effective arrangement; and

a row of tubular coordinated coils or permanent magnets disposed around the piston within the cylinder for increasing piston area of the machine and/or length of stroke of the piston,

interaction between magnetic fields of the coordinated coils or permanent magnets and the magnetic elements obtaining energy transmission upon axial movement of the piston in the cylinder, and wherein oscillations of the piston will cause oscillations of said tubular cylinder, said cylinder being connected as an output to a working device.

16. (previously presented) Machine according to claim 15, wherein the piston comprises a concentric row of tubular magnetic elements which are placed with a mutual intermediate gap, in which gaps are arranged tubular coil arrangements with the coordinated coils for increasing the area of the piston.

17. (previously presented) Machine according to claim 16, wherein the piston, is at least on one end, connected to a piston bar, said piston bar being guided out through an end chamber for transferring mechanical energy to or from the machine.

18. (previously presented) Machine according to claim 16, wherein the piston has a mass over 4 kg.

19. (previously presented) Machine according to claim 16, wherein the machine has a length of stroke of about 10 cm and the piston has an area greater than 0.03 m².

Claim 20 (canceled).

21. (currently amended) Machine according to claim 15, wherein the pressure is greater than 30 bar.

22. (withdrawn) Machine according to claim 15, wherein the cylinder has walls formed of a thin-walled tube made out of electrically and magnetically non-conductive material, which works as a slide bearing, and which serves as support for windings of the coil.

23. (withdrawn) Machine according to claim 22, wherein a helical spring is placed at least at one end of the cylinder, to a central rest position of the piston in a vertical installation.

24. (withdrawn) Machine according to claim 22, wherein the permanent magnets are multipolar, and assembled of a plurality of magnets with or without iron in-between, so that more than two magnetic poles along the piston are formed.

25. (withdrawn) Machine according to claim 15, wherein the permanent magnets surround the piston and the coil windings are disposed inside the piston.

26. (withdrawn) Machine according to claim 22, wherein the cylinder is constructed and arranged to be connected directly to a load or a driving unit.

27. (previously presented) In combination, a machine according to claim 15, and an element which is constructed and arranged to be vibrated, the machine being placed directly on the element without a piston bar.

28. (previously presented) Combination according to claim 27, wherein the machine is constructed and arranged to be coupled on the rear of a bit of a drill steel for drilling for oil and mining operations, to generate hammer drilling with an ordinary drill.

29. (previously presented) Combination according to claim 27, wherein the machine is constructed and arranged to be coupled to a tube or a beam which is to be driven down into the ground.

30. (new) Machine according to claim 15, wherein a drill bit or hammer head is secured to said tubular cylinder.